

REMARKS

Favorable reconsideration of the subject application is respectfully requested in view of the above amendments and the following remarks. Claims 35-73 are pending in the subject application, with Claims 35-37 being in independent format. This Amendment and Reply to the Office Action, mailed June 28, 2006, is being filed with a 2-month extension of time fee payment, therefore extending the response period to November 28, 2006.

New Claims 72 and 73 have been added. New Claim 72 depends from independent Claim 35, and new Claim 73 depends from independent Claim 36. Both new Claims 72 and 73 recite a crop protection composition being a “water-based suspension concentrate.” New Claims 72 and 73 are supported by the specification as originally filed. Specifically, support can be found in the examples described on pages 8-15. The formulations used in the examples are referred to as “suspension concentrates”, and it clearly follows from the description of these formulations that they are “water-based” (see pages 8-9; Suspension concentrates A-E). Support for new Claims 72 and 73 can also be found on page 6, paragraph 4.: “In the formulation form/appearance of a suspension concentrate....”.

It is urged that support for all the above amendments may be found throughout the specification as originally filed and that none of the amendments constitute new matter or give rise to prosecution history estoppel.

Claim Rejections – 35 U.S.C. §112, first paragraph

The Examiner has rejected Claims 35, 36, and 38-59 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states that the term “water based” does not occur or have description in the specification in such a way as to reasonably convey to one skilled in the relevant art that applicants’ invention, at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

Applicants submit that the formulation examples (suspension concentrates A-E) as shown on pages 8-9 of the specification as filed are “water-based”, since water was used as the liquid base in which all other components (active substances, inorganic adsorbent, etc.) were dissolved or dispersed. Thus, the term “water based” has description in the specification in such a way as

to **reasonably** convey to one skilled in the relevant art that applicants, at the time the application was filed, had possession of the claimed invention.

Applicants respectfully submit that Claims 35, 36, and 38-59 comply with the written description requirement. It is urged that the claim rejections under 35 U.S.C. §112, first paragraph, may thus be properly withdrawn.

Claim Rejections – 35 U.S.C. §103(a)

Claims 35, 36, and 38-59 under 35 U.S.C. §103(a) are rejected as being unpatentable over *Murphy et al.* (U.S. Patent No. 5,658,851). This rejection is respectfully traversed, particularly in view of the above amendments and the following remarks.

The Examiner maintains that *Murphy et al.* teaches novel oil based agricultural adjuvant compositions comprising lipophilically modified silicone, an oil carrier, and a water insoluble pesticide and that the silicone/oil composition gives improved spreading properties relative to the carrier oil alone. The Examiner also states that *Murphy et al.* teaches that 0.1 to about 2.5% silica fillers such as Tullanox (silicon dioxide) or Aerosil (silica gel) and 1-50% nonionic surfactants (auxiliaries) such as tridecyl alcohol ethoxylate can be added to the composition. The Examiner further states that *Murphy et al.* teaches that pesticides such as phenmedipham (biscarbamate) and desmedipham (biscarbamate) can be added to the composition. The Examiner alleges that it would have been obvious to one having ordinary skill in the art to add the optional ingredients, Aerosil or Tullanox plus phenmedipham or desmedipham plus tridecyl alcohol ethoxylate, to the silicone/oil component and that one would have been motivated to do this in order to enhance the spreading of the actives, phenmedipham and desmedipham, on the plants. The Examiner further alleges that it would have been obvious to one having ordinary skill in the art to determine the optimum surface area of the silica gel, and optimum amount of herbicide and the optimum particle size of the actives and auxiliaries and that one would have been motivated to do this to assure that the composition would spread effectively on the plant when applied thereto.

In the present office action, the Examiner argues that the name “ethoxylated castor oil” defines “ethoxylated castor oil” as being an oil; and that applicants provide no evidence to show “ethoxylated castor oil” is not an oil.

As described on page 2 of applicants' specification as filed, crop protection agents may be formulated according to the prior art as oil-based formulations or as aqueous suspensions. Thus, a person of ordinary skill in the art will be able to understand that oil-based formulations and aqueous suspensions are two different formulation types of crop protection compositions. The object of applicants' invention is to overcome the disadvantages associated with oil-based formulations, and that it is clear from the teachings of applicants' invention that it was not intended to provide oil-based formulations.

Regarding the Examiner's statement: "the name 'ethoxylated castor oil' defines 'ethoxylated castor oil' as being an oil", applicants respectfully submit that there are many cases in which a product includes the name of the original substance from which the product was prepared. However, the mere fact that the name of the original substance appears in the name of the product does **not** justify the conclusion that the product would also have the same properties suggested by the name of the original substance. For example, an "esterified alcohol" contains the term "alcohol". However, an esterified alcohol is an ester, rather than an alcohol. Likewise, the term "fermented milk" merely indicates that fermented milk was obtained from milk by a fermentation process. However, "fermented milk" is not a milk. Rather, fermented milk is a yoghurt or kefir.

Similar to the above discussions regarding esterified alcohol and fermented milk, it cannot be concluded that "ethoxylated castor oil" is an oil. Ethoxylated castor oil is produced by reacting castor oil (a plant-derived oil) with ethylene oxide. Although the resulting "ethoxylated castor oil" still has the term "oil" in its name, ethoxylated castor oil does not meet the criteria of an oil. According to Webster's Online Dictionary, an "oil" is "a slippery or viscous liquid or liquefiable substance that is not miscible with water". (see Exhibit A).

According to the technical Information brochure of a commercially available product, made by reacting castor oil with ethylene oxide - "Cremophor EL" from BASF (Exhibit B) - ethoxylated castor oil is used in aqueous preparations of hydrophobic substances and forms clear solutions in water. Thus, ethoxylated castor oil is soluble or miscible with water, and therefore does not fall within the definition of an "oil". In addition, ethoxylated castor oil is also referred to as "polyoxyl n castor oil" or "polyethylene glycol castor oil (see enclosed document from the "EMEA"). These compositions are non-ionic surfactants and are generally highly dispersible in

water. *Unmodified* castor oil is lipophilic and is not miscible with water. However, ethoxylated castor oil, is an entirely different composition and is soluble, or miscible in water.

Applicants submit that there is sufficient evidence demonstrating that “ethoxylated castor oil” is **not** an oil. Ethoxylated castor oil, according to the specification as filed, is added to the claimed invention due to its ability to act as a wetting agent (Table 7) or as a surfactant (page 4, 2nd paragraph). A substance that is miscible with water, i.e., an oil, can never be used as a wetting agent or as a surfactant, due to the hydrophobic properties which are inherent to oils. In contrast, ethoxylated castor oil can be used as a wetting agent or a surfactant, which does *not* justify the Examiner’s conclusion that the claimed compositions comprise an oil.

Based on the above discussion, applicants submit that *Murphy et al.* teaches certain organosilicone compounds that are considered useful as agricultural adjuvants with carrier oils. These adjuvants are intended to be used in combination with oil-based agricultural chemicals to improve their ability to spread (*see* col. 1, lines 8-19 and col. 4, lines 2-6).

Murphy et al. discusses that oil-based agricultural chemicals generally contain petroleum or vegetable oils (col. 1, lines 20-22) and teaches carrier oils comprising oils and mixtures thereof, for example, paraffinic mineral oils, vegetable oils and methylated oils (*se* col. 3, lines 19-25). *Murphy et al.* also discloses that paraffinic, aromatic-based mineral oils, animal or vegetable oils, or water insoluble pesticide may act as carrier oils (*see* col. 1, lines 60-62). In addition, as disclosed in Examples 2-5, *Murphy et al.* teaches that mineral oil, methylated soybean oil, soybean oil are used as oil carriers.

The adjuvant compositions as taught by *Murphy et al.* include modified organosilicone and an oil carrier as the two main ingredients (*see* col. 1, lines 56-62). The adjuvant compositions described in Examples 2-5 of *Murphy et al.* were obtained by mixing an organosilicone with a suitable amount of carrier oil (e.g. a 1:1 mixture, as described in Example 2). These adjuvant compositions were prepared without water. Thus, these adjuvant compositions are ‘oil-based compositions’ or “oil compositions”.

In contrast, as stated in the specification as filed (page 2, paragraphs 2-4), oil-based herbicide preparations are generally disadvantageous as they require relatively high proportions of additives or bioactivators such as oils and surfactants in order to be sufficiently active. *It was the object of the present invention to overcome the shortcomings associated with prior art crop*

protection compositions, such as oil-based compositions. All of the suspension concentrates as described in the specification as filed were prepared without adding an oil component. Furthermore, as described in Example 4, a suspension concentrate was compared to approved emulsion concentrates (Betanal), and it was found that the herbicidal activity was substantially improved when the composition according to the present invention was employed (*see also* Example 5 on p. 15). The term “emulsion concentrate” implies that the prior art compositions “Betanal” were oil-containing or oil-based compositions. Applicants respectfully reiterate that it was not the object of the present invention to provide oil-based compositions as taught by *Murphy et al.*

Furthermore, none of the examples taught by *Murphy et al.* describes a composition containing an active ingredient, and it remains unknown whether the “spreading effect” asserted by *Murphy et al.* (Examples 2-6) would have any significant effect on herbicidal activity under practical conditions. Therefore, applicants doubt whether the teachings of *Murphy et al.* can be considered enabling as far as active substance-containing crop protection compositions are concerned.

Applicants also submit that the “ethoxylated castor oil”, as disclosed in table 7, page 16 of the applicants’ specification, in terms of its chemical structure, is not an “oil”, but rather a surfactant or wetting agent, as described on page 4, 2nd paragraph, lines 1-7 of the specification. Applicants further submit that a “castor oil” contains mainly of the triglyceride of ricinolic acid, which is a fatty acid, and therefore, is rather non-polar and belongs to the chemical group of fats or oils. However, an “ethoxylated castor oil” contains ethoxy groups introduced via ethoxylation, and therefore, is rather polar and does not have the characteristics of an oil.

Claims 35 and 36 recite water-based crop protection compositions. *Murphy et al.* fails to disclose an aqueous suspension concentrate that is substantially free of oil. *Murphy et al.* teaches the use of a carrier oil in which the active substance (herbicide) is dissolved or dispersed. Therefore, the carrier oils described by *Murphy et al.* cannot be used for formulating the aqueous suspension concentrate as taught by applicants’ invention. Accordingly, Claims 35 and 36 cannot be obvious in view of *Murphy et al.*

It is urged that *Murphy et al.* would not render Claims 35, 36, and 38-59 obvious to one of skill in the art, and that the present rejection of the claims under 35 U.S.C. §103(a) may be properly withdrawn.

Allowable Subject Matter

The Examiner states that Claims 37, 60-71 are allowable because the prior art does not teach or suggest the instant invention comprising ethofumesate or metamitron.

Conclusion

In view of the above amendments and remarks, applicants believe that they have addressed all of Examiner's concerns. Early consideration and allowance of all the pending claims is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Victor N. King", with a stylized, flowing script.

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